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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-------------------------------------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/658,846 | 09/09/2003 | Kie-Hsiung Yang | 250806-1310 | 5416 |
| 24504 | 7590 | 05/04/2005 | EXAMINER | |
| THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP 100 GALLERIA PARKWAY, NW STE 1750 ATLANTA, GA 30339-5948 | | | PARKER, KENNETH | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2871 | |

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/658,846

Applicant(s)

YANG ET AL

Examiner

Kenneth A. Parker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
4a) Of the above claim(s) 3 is/are withdrawn from consideration.
5) ☒ Claim(s) 9-41 is/are allowed.
6) ☒ Claim(s) 1, 2 and 4-8 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 4-5, 7-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Itou et al 6556260.

Regarding claim 1, Itou shows a liquid crystal display device, comprising:

a first substrate 11;

organic light emitting element 31, (that the layer is organic is in column 10, lines 15-25)

“light emitting layer 131 is comprised of an organic binder that contains a powder of a fluorescent substance, and the thickness of this layer is 50 .mu.m. For this fluorescent substance, a powder of ZnS with addition of Mn is used in this embodiment of the invention, and its particle size is distributed in a range from about 5 .mu.m to 20 .mu.m. Cyanoethyl cellulose is used as its organic binder.”

a transparent protective layer 42 formed on the OLED element (any layer can be construed as a protective layer, because once applied the layer will provide protection against oxidation and other effects); a common electrode 20 formed on the transparent protective layer;

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a second substrate opposing 12 the first substrate, wherein the second substrate has a pixel electrode thereon 21 ;
and a liquid crystal layer 10 interposed between the first substrate and the second substrate.

Regarding claim 2, the disclosure further shows the OLED element comprises: a cathode formed on the first substrate 22 (a first electrode, but as the device is driving with an AC voltage (column 10), it can be considered a cathode as it would be negative half the time and positive half the time); an organic emitting layer 131 formed on the cathode; and an anode formed on the organic emitting layer (a second electrode, but as the device is driving with an AC voltage, it can be considered an anode as it would be negative half the time and positive half the time).

Regarding claim 4, the disclosure further shows the cathode is a metal layer (see column 7, lines 30-48).

Regarding claim 5, the disclosure further shows wherein the anode is transparent (see column 7, lines 30-48).

Regarding claim 7, the layer 42 will have at least some moisture blocking capability (compared with it's absence), and therefore can be construed as a moisture blocking layer.

Regarding claim 8 wherein the common electrode is an ITO (indium tin oxide) or IZO (indium zinc oxide) layer (see column 10, lines 46-52, the reference indicates ITC, which one of ordinary skill would have recognized to be a misspelling of ITO, as ITO was the standard material, and there is no such transparent electrode as ITC).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 6-7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Itou et al 6556260 as applied above, and further in view of Yamaji et al 5721601.

All elements shown by Itou are discussed in the rejection under 35 USC 102 applied above.

Lacking from the disclosure is the transparent protective layer is a silicon nitride (SiNx) layer.

Yamaji discloses an LCD indicating the that interposing a SiN layer 20 between a smoothing film 32 and an active element (the TFT) prevents ions and moisture going through and changing the characteristics of the active element (column 13, lines 10-40).

The teaching is relevant because the OLED is also an active element, and henceforth would have been subject to the problem of properties that vary with impurity level, and the layer above it is shown to be a smoothing layer of the type of Yamaji and therefore known to be a source of impurities.

Therefore one of ordinary skill would have found reason, motivation and suggestion to modify the device of Itou to add an interposing nitride film between the active OLED element and the smoothing film, thereby preventing the problem of contamination as taught by Yamaji et al.

Further, as modified above, the nitride layer is a stronger water blocking film, and would therefore read on a narrow reading of water or moisture blocking of claim 7.

Allowable Subject Matter

Claims 9-41 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

None of the prior art taught or suggested:

Regarding claim 9, a liquid crystal device with a first substrate having an oled element, a common electrode followed by a polarizer thereon, with the other substrate having a pixel electrode on an inner side and a polarizer on the outer side, and the liquid crystal interposing the substrates.

Regarding claim 22, a liquid crystal device with a first substrate having an oled element formed on it, a protective layer formed on that, a wire grid polarizer formed thereon (the formed on relationships taken to mean formed on, as opposed to placed on), with the other substrate having a pixel electrode on an inner side and a polarizer on the outer side, and the liquid crystal interposing the substrates.

Regarding claim 33, a liquid crystal device with a first substrate having an oled element formed on it, a protective layer formed on that, a polarizer formed thereon (the formed on relationships taken to mean formed on, as opposed to placed on), with the other substrate having an electrode pattern that produced a parallel field, on an inner side and a polarizer on the outer side, and the liquid crystal interposing the substrates.

Election/Restrictions

Applicants election without traverse of group II is acknowledged. However, it appears that only claim 3 is limited explicitly to the non-elected group. Therefore,

claims 1-2 and 4-41 have been examined, as it appears that all are readable on the elected species.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bell 20050062410

Uehara et al 4772885

Kumar et al 5926239

Itou et al 6556260

Fork 6072517

6100954

Fujieda 6781647

Kanbara et al 5629783

Abe et al 6441551

Okada 6788361

Okada et al 6870583


Peterson et al 20050035361

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth A. Parker whose telephone number is 571-272-2298. The examiner can normally be reached on M-F 10:30-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kenneth A Parker
Primary Examiner
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